

### REMARKS

This Application has been carefully reviewed in light of the Office Action mailed June 30, 2005. At the time of the Office Action, Claims 1-70 were pending in this Application. Claims 1-12, 24, 36, 38, 42-45, 47, 55-57 and 61 were rejected. Claims 13-23, 25-35, 37, 39-41, 46, 48-54, 58-60 and 62-70 have been withdrawn due to an election/restriction requirement. Claims 1, 2, 6, 36, 42, 55, and 56 have been amended to further define various features of Applicants' invention. Claims 71-95 have been added. Applicants respectfully request reconsideration and favorable action in this case.

#### **Rejections under 35 U.S.C. § 102**

Claims 1, 10, 12 and 24 were rejected by the Examiner under 35 U.S.C. §102(e) as being anticipated by U.S. Patent 6,707,102 issued to Morikawa et al. ("Morikawa et al."). Applicants respectfully traverse and submit the cited art does not teach all of the elements of the claimed embodiment of the invention.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1997). Furthermore, "the identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co. Ltd.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Applicants respectfully submit that the cited art as anticipatory by the Examiner cannot anticipate the rejected Claims, because the cited art does not show all the elements of the present Claims.

Applicants amended independent claim 1 to more clearly define the shape of the coupling structure, in particular, the metal barrier as shown in Figs. 2-15. As described in the specification and the Figs., this metal barrier comprises a flat horizontal area arranged adjacent to the via. This flat horizontal area further comprises a surrounding sidewall which is arranged rectangular to the flat horizontal area as shown in detail for example, in Fig. 3B. Thus, the metal barrier has the form of a cup in which the via is located.

Morikawa does not show any type of metal barrier. Thus, Applicants believe that Morikawa does not anticipate claims 1, 10, 12, and 24.

**Rejections under 35 U.S.C. §103**

Claims 2-7 and 9 were rejected under 35 U.S.C. §103(a) as being unpatentable over Morikawa et al. in view of U.S. Patent 5,654,589 issued to Huang et al. ("Huang et al."). Applicants respectfully traverse and submit the cited art combinations, even if proper, which Applicants do not concede, does not render the claimed embodiment of the invention obvious.

Claim 8 was rejected under 35 U.S.C. §103(a) as being unpatentable over Morikawa et al. in view of Huang et al., and further in view of U.S. Patent 6,664,186 issued to Callegari et al. ("Callegari et al."). Applicants respectfully traverse and submit the cited art combinations, even if proper, which Applicants do not concede, does not render the claimed embodiment of the invention obvious.

Claims 11, 42, and 61 were rejected under 35 U.S.C. §103(a) as being unpatentable over Morikawa et al. in view of U.S. Patent 6,600,182 issued to Rumennik ("Rumennik"). Applicants respectfully traverse and submit the cited art combinations, even if proper, which Applicants do not concede, does not render the claimed embodiment of the invention obvious.

Claims 36, 38, 43, 44, 45, 47, 50, 55, 56, and 57 were rejected under 35 U.S.C. §103(a) as being unpatentable over Morikawa et al. in view of Huang et al., and further in view of Rumennik. Applicants respectfully traverse and submit the cited art combinations, even if proper, which Applicants do not concede, does not render the claimed embodiment of the invention obvious.

In order to establish a *prima facie* case of obviousness, the references cited by the Examiner must disclose all claimed limitations. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Furthermore, according to § 2143 of the Manual of Patent Examining Procedure, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the

reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

As discussed above, the independent claims 1 and 36 include the limitation of a metal barrier that comprises a flat horizontal area arranged adjacent to the via and a surrounding sidewall which is arranged rectangular to the flat horizontal area

Even though Huang teaches a metal barrier layer, Huang does not show the type of metal barrier for the source runner coupling structure as defined in the independent claims. For example, the sidewalls of the Huang structure are arranged at an angle of 45 degrees.

New Claims 71 and 83 have been added to further define the structure of the metal barrier layer. According to these claims the metal barrier comprises a second horizontal layer within the insulating layer extending from a top end of the side wall in a direction pointing away from the via. Thus, this structure allows for a further extension of the metal barrier layer as defined in new claims 76 and 84.

None of the cited references shows such a structure.

Independent Claim 42 has been amended to include the limitation of two different coupling structures for coupling the source runner with the source and the backside layer as shown for example in Figs. 11-13. The first coupling structure corresponds to the structure as defined in Claim 1. The second structure allows for a coupling of the source with the backside layer.

None of the cited references shows such an extendable structure. Therefore, Applicant believes that all independent claims are allowable.

Applicants respectfully submit that the dependent Claims are allowable at least to the extent of the independent Claims to which they refer, respectively. Thus, Applicants respectfully request reconsideration and allowance of the dependent Claims. Applicants reserve the right to make further arguments regarding the Examiner's rejections under 35 U.S.C. §103(a), if necessary, and do not concede that the Examiner's proposed combinations are proper.

**CONCLUSION**

Applicants have now made an earnest effort to place this case in condition for allowance in light of the amendments and remarks set forth above. Applicants respectfully request reconsideration of the claims as amended.

Applicants believe there are no fees due at this time, however, the Commissioner is hereby authorized to charge any fees necessary or credit any overpayment to Deposit Account No. 50-2148 of Baker Botts L.L.P.

If there are any matters concerning this Application that may be cleared up in a telephone conversation, please contact Applicants' attorney at 512.322.2545.

Respectfully submitted,  
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Date: September 23, 2005

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### **SUBMISSION OF FORMAL DRAWINGS**

**In the Drawing:**

Enclosed please find formal drawings consisting of FIGURE 1-15 on 23 pages for this application for review and approval. Applicants request the Examiner to enter and approve the enclosed formal drawings. Applicants respectfully submit that the formal drawings are supported by the specification and add no new matter.